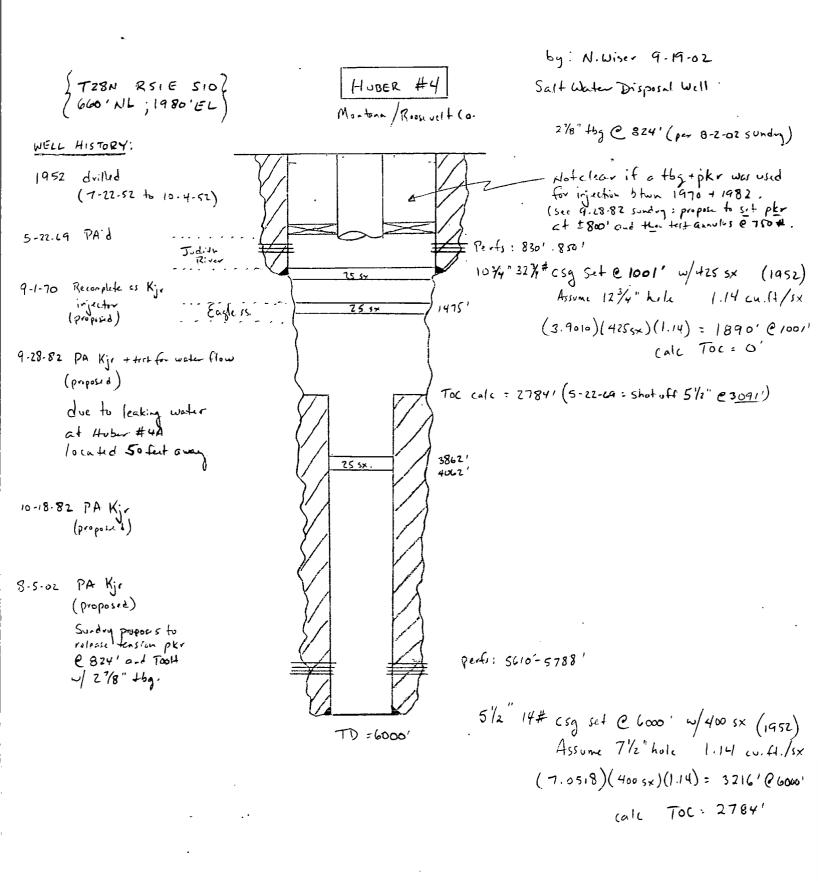
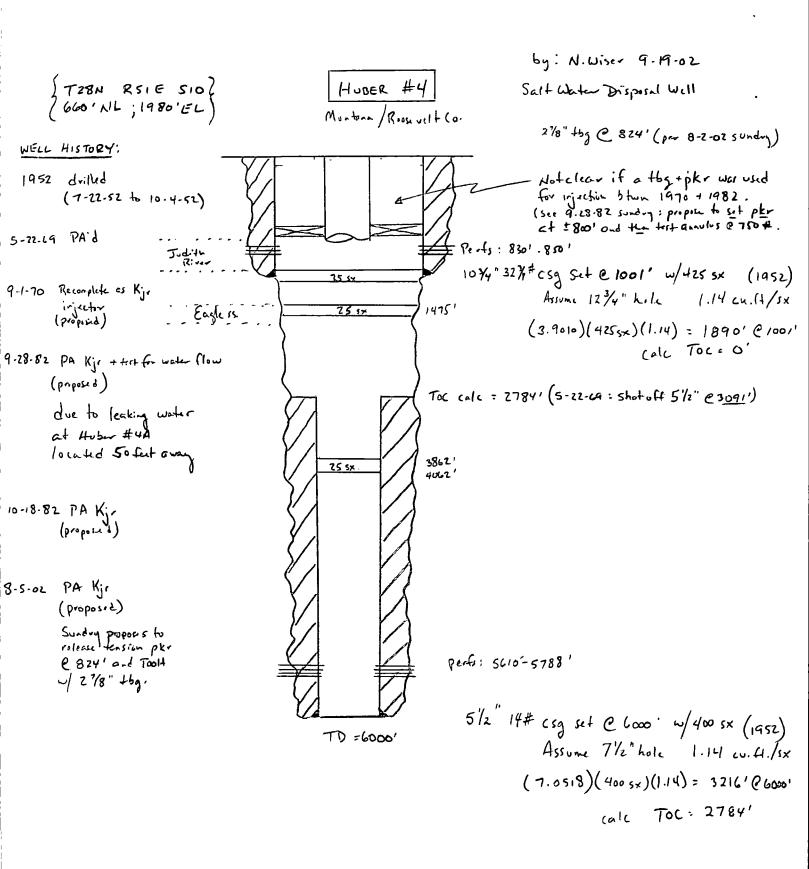
1044b UIC - EAST POPLAR OIL FIELD **ENFORCEMENT CASE SDWA 1431** Folder ID: 13624 2002 Privileged

Release

Region 8 13624



Kjr = creteceous-aged JudithRiver



Kjr = cretaceous-aged JudituRivar

EPU SALT WATER STATION NO. 4-D

SUPPLIMENT TO HELL HISTORY

Shut down pumps - started 1,000 gallous produced water with PEN-5 penetrating agent and let soak 30 mins. on perforations. Pumped 500 gallons 26% hydrochloric acid with additives. Let soak on perforations for 20 mins.. Pumped 500 gallons more acid with additives in perforations. Let soak 20 mins.. Started pumping 1,000 gallons produced water with PEN-5 penetrating agent. Let soak 30 mins. on perforations. Pumped 500 gallons 28% hydrochloric acid with additives. Let soak on perforations 20 mins.. Pumped remaining 500 gallons acid with additives and let soak 20 mins.. Started pumps.

Additivas Used:

12 Gallons Tahibitor 24 Gallons PEN-5 (penetrating agent) 50% FE-2 Citric Acid Crystals

Pafore Acid Job - 820 PSI After Acid Job - 820 PSI 640

A.F.E. No. 5-1521-10 (Supplement No. 1)

MURPHY OIL CORPORATION AUTHORITY FOR EXPENDITURE - NO. 4 SWD STA. NW SE SEC. 10 T28N-R51E - ROOSEVELT COUNTY, MONTANA

PROPOSAL & JUSTIFICATION

This A.F.E. is over-expended approximately \$10,000 gross. This over-expenditure is primarily due to increased installation costs brought about by abnormal vibration in the Peerless Pumps while testing.

ESTIMATED COST

	ORIGINAL AFE'D	•	REVISED	
Pump & Auxiliary Equipment Labor, Material & Trucking to Inst	\$ 70,000		\$ 70,000	
Labor, Material & frucking to Inst	\$ 75,000	•	\$ 85,000	
TOTAL SUPPLEMENTAL ESTIMATE	\$	10,000) 	
· · · · · · · · · · · · · · · · · · ·			788465.	Sizen+
APPORTIONMENT	OF TOTAL ESTIMATED COSTS		*88465. 5-13	.76
Murphy Oil Corporation	31.448470%		\$ 3,145	
Placid Oil Corporation	33.545035%		3,355	
Phillips Petroleum Company	16.335860%		1,633	
Exxon Company, U.S.A.	16.335860%		1,633	
Munoco Company	2.096565%		210	•
C. F. Lundgren	0.238210%		24	
·				
				•

APPROVAL OF EXPENDITURE

Requested:

APPROVED:

Date

World Completed 4-23 y 88465 cost 8 cost

MURPHY OLL CORPORATION AUTHORITY FOR EXPENDITURE - NO. 4 SWD STA. NW SE SEC. LO T28N R5TE - ROOSEVELT COUNTY, MONTANA

CHANGE OUT DISPOSAL PUMP

PROPOSAL & JUSTIFICATION

It is proposed to change out the Oilwell P-346 Salt Water Disposal Pump (5000 BPD capacity) with a disposal pump of 15,000 BPD capacity.

Before any increase in production can be realized in the south end of the East Poplar Unit the salt water disposal capabilities must be increased. There are presently two salt water disposal stations in the south end of the Unit, namely EPU #8-D and EPU #80-D, with a total capacity of 10,000 BPD. By increasing the disposal capacity of No. 8-D, seven "C" and "A" zone flowing wells could be opened for increased total fluid recovery of 3,000-5,000 BPD. This increased flow will be high water cut (approximately 97%) but will make it possible to add 100-150 BOPD of low lifting cost oil. This proposed salt water dispoal enlargement is also in an area where there are potentially three additional Reda installations. The additional three Redas are expected to make for an increase of about 450 BOPD. This increase in disposal capacity is necessary before the production can be increased as shown above. Additional justification for this salt water disposal expansion is covered in the accompanying recommendation entitled "Production Improvement Project-East Poplar Unit".

ESTIMATED, COST

Pump & Auxiliary Equipment	\$70,000
Labor, Material & Trucking to Install	<u>5,000</u>
TOTAL ESTIMATED COST	\$75,000

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470	23,590
Placid Oil Corporation	33.545035	25, 160
Phillips Petroleum Company	16.335860	12,250
Exxon Company, U.S.A.	16.335860	12, 250
Munico Company	2.096565	1,570
C. F. Landgren	0.238210	1.80

APPROVAL OF EXPENDITURE

Kequested:		APPROVED:	
W. C. BROWN	7-10-75	Jam. D. Samon.	7/14/15
	Date	1//1/8 10	/ Byate
		Malley Co-) 7/2//7

Date

Date

. .

A.F.E. No. 6-1549-10

MURPHY OIL CORPORATION AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT NO. 4-D NW SE Section 10, T28N, R51E, RooseveltCounty, Montana (Acidize Well)

It is proposed to acidize the Dakota Sand perforations, 3195-3255, 3335-3400, and 3430-3445, with 3000 gallons of 15% acid with 10% FEIA.

The injection pressure is now 840#, which exceeds the working pressure of our pumps with the size plungers being used. The above treatment should lower our injection pressure to approximately 350#.

ESTEMATED COST

3000 Gallons Acid and Services Supervision TOTAL ESTIMATED COST

\$ 3,190 3527 100 163 \$ 3,290

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation Placid Oil Company Exxon Company, U.S.A. Phillips Petroleum Company Munoco Company C. F. Lundgren	31.448470% 33.545035% 16.335860% 16.335860% 2.096565% .238210%	\$ 537	194 (241. 848 (356) 413 (124 113 (164) 53 (16) 6 (2)
--	--	---------------	---

APPROVAL OF EXPENDITURE

Requested by:

Bhele Melear

Approved by

A. W. Simpson

BGM/sb October, 1976

MURPHY OIL CORPORATION AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT SWD STATION NO. 4 NW SE SECTION 10, T28N, R51E, ROOSEVELT COUNTY, MONTANA

PROPOSAL & JUSTIFICATION

we to crankshaft breaking considerable damage was done to the Oilwell 346-P Salt Water ump at this station. It is proposed to replace the crankshaft and all damaged gears.

ome of the wells are shut-in and others cut back in the South area of the Unit because e can not handle produced water with this pump down.

ESTIMATED COST

epair Parts abor upervision TAL ESTIMATED COST	PPORTIONMENT OF TOTAL ESTIMATED COST	\$ 6,800 1,180 200 \$ 8,180
rphy Oil Corporation acid Oil Company xon Company, U.S.A. iillips Petroleum Company noco Company F. Lundgren	31.448470% 33.545035% 16.335860% 16.335860% 2.096565% .238210%	\$ 2,572 2,744 1,337 1,337 171 19
	APPROVAL OF EXPENDITURE	
quested By:	APPROVED BY:	•
LLY G. MELEAR	11-24-76 Date	11-29-76 Date

l: cg .-29-76)

c)

MURPHY OIL CORPORATION AUTHORITY FOR EXPENDITURE - EAST POPLAR UNIT SWD STATION NO. 4 NW SE SECTION 10, T28N, R51E, ROOSEVELT COUNTY, MONTANA

is well was treated in October, 1976, with 3,000 Gallons 15% HCL Acid preceded with 3 Gallons Solvent to clean face of formation. About the only noticeable pressure op observed during the job was during the time solvent was being pumped into formation.

injection pressure has now reached 900# with Peerless pumping approximately 9,000 PD. Recommend we treat the Dakota formation perforations, 3195-3255', 3335-3400', 30-3445' by Dowell as follows:

1,000 Gallons produced water with F-40 (surfactant).
500 Gallons 28% acid (with additives) - soak in perforations 15 minutes.
500 Gallons 28% acid (with additives) - soak in perforations 15 minutes.
1,000 Gallons produced water with F-40 (surfactant).
500 Gallons 28% acid (with additives) - soak in perforations 15 minutes.
500 Gallons 28% acid (with additives) - soak in perforations 15 minutes.
Start pump.

this treatment will reduce our pressure to 650# PSI, our injection rate will inase to approximately 11,500 BFPD. Packing problems and high associated costs will reduced.

ESTIMATED COST

ell Serviceservision		\$ 2,975 100
AL ESTIMATED COST		\$ 3,075
APPORTIONM	ENT OF TOTAL ESTIMATED COST	
phy 011 Corporation cid 011 Company on Company, U.S.A.	31.448470% 33.545035% 16.335860%	\$ 967 1,032 502
llips Petroleum Company	16.335860% 2.096565%	502 65

APPROVAL. OF EXPENDITURE

iested:

F. Lundgren

APPROVED:

.238210%

Y G. MELEAR

3-21-77

Colmitr. Sum

Date

cg 4-77) (2,450)

A.F.E. No. 1-1509-10

MURPHY OIL CORPORATION AUTHORITY FOR EXPENDITURE EAST POPLAR UNIT 4-D SWD STATION NO. 4, LOCATED NW SE SEC. 10-T28N-R51E ROOSEVELT COUNTY, MONTANA - EAST POPLAR FIELD

The 300 Bld. fiberglass tank at 4-D came apart and collapsed from excess heat. It is proposed to put in a 400 Bbl. steel welded tank coated with Engard 480 coating.

ESTIMATED COST

Tank 400 Bbl Engard 480 coating	\$7,800
Roustabout Labor	6,500
Connections	1,500
Water Tank	500
Materials to rebuild building	800
Electrician	1,000
Total Estimated Cost	\$18,100

APPORTIONMENT OF TOTAL ESTIMATED COST

Murphy Oil Corporation	31.448470%	\$5,692
Placid Oil Company	33.545035%	6,072
Exxon Company U.S.A.	16.335860%	2,957
Phillips Petroleum Company	16.335860%	2,957
Munoco Company	2.096565%	379
C. F. Lundgren	.238210%	43

APPROVAL OF EXPENDITURE

Requested by:	•	Approved by:	
Paymond Reede	<u> 7-16-61</u>	Man W Jonani	7/20/8/
Raymond Reede	Date	A. W. Simpson	Date

R/bv ly 16, 1981

DATE JOB COMPLETED____

ADDROVING TO COCT

MURPHY OIL CORPORATION .

REC. PROD.

FEB 1 5 1982

AUTHORITY FOR EXPENDITURE EAST POPLAR UNIT 4-D

SWD STATION NO. 4, LOCATED NW SE SEC. 10-T28N, R51E ROOSEVELT COUNTY, MONTANA - EAST POPLAR FIELD

The Roustabout labor, Connections, and Water Tank were more than anticipated.

COST

		Orginal A.F.E.	Actual Cost	Supplement No.1
Tank 400 Bbl. & Coat		\$7,800	\$9,935	\$2,135
Roustabout Labor		\$6,500	\$8,460	\$1,960
Connections		\$1,500	\$4,680	\$3,180
Water Tank		\$ 500	\$1,109	\$ 609
Materials		\$ 800	\$ 196	\$(604)
Electrician		\$1,000	\$ 0	\$(1000)
Total Cost .		\$18,100	\$24,380	\$6,280
, <u>A</u>	PPORTIONNENT OF TO	TAL ESTIMATED CO	OST	
Murphy Oil Corporation	31.448470%	\$5,692	· \$7,667	, \$1,975
Placid Oil Company	33.545035%	\$6,072	\$8,178	\$2,106
Exxon Company, U.S.A.	16.335860%	\$2,957	\$3,983	\$1,026
Phillips Petroleum Co.	16.335860%	\$2,957	93,983	\$1,026
	2.096565%	\$ 379	. \$ 511	\$ 132
Munoco Company				

APPROVAL OF EXXPENDITURE

Requested by:

Approved By:

Raymond Reede

Date

A.W. Simpson

RR/bv February 9, 1982 GEORGE SURVEY Chandoned to Pain RECEIVED (SUBMIT IN QUADRUPLICATE)

TO

SIE BORNES CONSERVATION COMMISSION

BILLINGS OR SHELBY

NOTICE!
THIS FORM BECOMES A
PERMIT WHEN STAMPED
APPROVED BY AN AGENT
OF THE COMMISSION.

SUNDRY NOTICES AND REPORT OF WELLS

Notice of Intention to Drill	Subsequent Report of Water Shut-off	
Notice of Intention to Change Plans	Subsequent Report of Shooting, Acidizing, Cementing	
Notice of Intention to Test Water Shut-off	Subsequent Report of Altering Casing	
Notice of Intention to Redrill or Repair Well	Subsequent Report of Redrilling or Repair	
Notice of Intention to Shoot, Acidize, or Cement	Subsequent Report of Abandonment	_X
Notice of Intention to Pull or Alter Casing	Supplementary Well History	
Notice of Intention to Abandon Well	Report of Fracturing	
(Indicate Above by Check M	ark Nature of Report, Notice, or Other Data)	
(4.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5.5	May 22.	

			May	22, 19 69
ollowing is a	notice of intention report of work do		L coursed 1	
	(00 p 010 00 00 00 00 00		LEASE H	uber
		Rooseve	elt	E. Poplar
***********************	MONTANA(State)		(County)	(Field)
Vell No	4 ~	10	28N	51E
	·	(m. sec.)	(Township)	(Range) (Meridian)
he well is loc	ated 660	ft. from{ 🚡 }	line and 1980 ft from	m $\left\{egin{array}{c} \mathbf{E} \\ \mathbf{K} \end{array} ight\}$ line of Sec \mathbf{IO}
(Locate accus	rately on Plat on back	of this form the well loc	cation, and show lease boundary;)	
he elevation	of the derrick floo	r above the sea level	is 2091 (KB)	•••
EAD CAREF	THIN	DETAIL	S OF PLAN OF WORK	READ CAREFULL
				casings; indicate mudding jobs, cementing
			details results Shooting, Acidizing, Fracti	
		DE	TAILS OF WORK RESULT	•
•				•
29/66	Tagged shal	le plug at 4062'.	. Ran 25 sack cement pl	ug from 4062' - 3862'.
•	•	le plug at 4062'.	·	ug from 4062' - 3862'.
30/66	Tagged cem	nent plug at 386	·	21282930
29/66 30/66 1/66 2/66	Tagged cem	nent plug at 3862	2'.	21282930
30/66 1/66 2/66	Tagged cerr Shot off 5 1 Set 25 sack Set 25 sack	nent plug at 3862 / 2" casing at 30 cement plug on plug in and out	2'. 091' and pulled 103 joints top of Eagle sand at 147 of bottom of 10 3/4 surf	5'. ace at 460' and 5, sack
30/66 1/66 2/66 5/66	Tagged cem Shot off 5 1 Set 25 sack Set 25 sack cement plus	/2" casing at 3862 cement plug on plug in and out g on top of surfa	2'. 191' and pulled 103 joints 1 top of Eagle sand at 147 1 of bottom of 10 3/4 surface pipe with regulation in	5'. ace at 460' and 5 sack marker.
30/66 1/66 2/66 5/66 Approved sub	Tagged cerr Shot off 5 1 Set 25 sack Set 25 sack	/2" casing at 3862 cement plug on plug in and out g on top of surfa	of bottom of 10 3/4 surface pipe with regulation recompany.	5'. ace at 460' and 5 sack marker.
30/66 1/66 2/66 5/66 Approved sub	Tagged cem Shot off 5 1 Set 25 sack Set 25 sack cement plug ject to conditions on	cement plug at 3862 /2" casing at 30 cement plug on plug in and out g on top of surfa	2'. 191' and pulled 103 joints 1 top of Eagle sand at 147 1 of bottom of 10 3/4 surface pipe with regulation in	5'. ace at 460' and 5 sack marker.
30/66 1/66 2/66 5/66 Approved subpose	Tagged cem Shot off 5 1 Set 25 sack Set 25 sack cement plug ject to conditions on	cement plug at 3862 /2" casing at 30 cement plug on plug in and out g on top of surfa	of bottom of 10 3/4 surface pipe with regulation recompany.	5'. ace at 460' and 5 sack marker.
30/66 1/66 2/66 5/66 Approved sub	Tagged cem Shot off 5 1 Set 25 sack Set 25 sack cement plug ject to conditions on 3 1 2 1999 GINAL SIGNID 2V:	/2" casing at 366 /2" casing at 30 cement plug on plug in and out g on top of surfa reverse of form	2'. 291' and pulled 103 joints a top of Eagle sand at 147 of bottom of 10 3/4 surface pipe with regulation regulation regulation by Title Agent Address 220 C.	5'. ace at 460' and 5 sack marker.

NOTICE FORM BECOMES

T WHEN STAME

THE COMMISSION.

(SUBMIT IN QUADRUPLICA)

OUL AND GAS CONSERVATION COMMISSI OF THE STATE OF MONTANA BILLINGS

SUNDRY NOTICES AND REPORT OF

Notice of Intention to Drill	Subsequent Report of Water Shut-off
Notice of Intention to Change Plans	Subsequent Report of Shooting, Acidizing, Cementing
Notice of Intention to Test Water Shut-off	Subsequent Report of Altering Casing
Notice of Intention to Redrill or Repair Well	Subsequent Report of Redrilling or Repair
Notice of Intention to Shoot, Acidize, or Cement	Subsequent Report of Abandonment
Notice of Intention to Pull or Alter Casing	Supplementary Well History
Notice of Intention to Abandon Well	Report of Fracturing
" " " Convert to SWD Well	x

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

Sentember 1

				19_19
Following is a Inotice of intention to Ireport of work done	o do work on land	owned described as f leased LEASE	ollows: Huber	
MONTANA	Rc	osevelt (County)	E. Pop	lar
(State)	_	(Coding)	11	rieid)
Well No. 4 (NUNE	10	28 N.	51 E.	• •
	(m. sec.)	(Township)	(Range)	(Meridian)
The well is located 660 ft.	from \ \ \frac{N}{2} \ \ \ \line and	1980 ft. from	E line of Sec	10~
Locate accuratély on plat (ON BACK OF THIS FO	RM THE WELL LOCATIO	N, AND SHOW LE	EASE BOUNDARY
The elevation of the derrick floor abo	ove the sea level is	2091' (KB)	•	
READ CAREFULLY	DETAILS OF	PLAN OF WORK	RI	EAD CAREFULLY
(State names of and expected depths	to objective sands; show s	size, weights, and lengths of	proposed casings; in-	dicate mudding jobs,

cementing points, and all other important proposed work, particularly all details results Shooting, Acidizing, Fracturing.)

DETAILS OF WORK

See Attached Rider for Details.

RIDER

It is proposed to convert this abandoned well to salt water injection service in the Judith River formation at about 840' to supplement the present Judith River disposal facility.

Present Status

F & A August, 1966. 10-3/4" - 32.75# surface casing set at 1001' (KB) and cemented with 475 sacks. Abandoned with a 25 sack plug in and out c the 10-3/4" casing shoe and a 5 sack plug at the surface with regulation marker. (Other plugs are set below the 10-3/4" shoe)

Proposed Work

Drill out surface plug. Run tubing to top of cement plug at shoe of 10-3/4", check depth and circulate casing with water. If depth of plug is satisfactory, pull tubing and run correlation log and perforate Judith River from approximately 840' to 860' with 1 jet shot per foot. set 20' above perforations and

NOTICE FORM BECOMES A AIT WHEN STAMPED ROVED BY AN AGENT THE BOARD. (SUBMIT IN QUADRUPLICATE)

TO

BOARD OF OIL AND GAS CONSERVATION

OF THE STATE OF MONTANA

MAC 36-3.18(10)-S18020 MAC 36-3.18(10)-S18030 MAC 36-3.18(10)-S18140

MAC:36-3.18(10)-S18140 MAC:36-3.18(10)-S18170

MAC 36-3.18(10)-S18200 MAC 36-3.18(10)-S18310 MAC 36-3.18(10)-S18330

STAIL OF MONT.

MAC 36-3.18(14)-S18380

BILLINGS OR SHELBY

SUNDRY NOTICES AND REPORT OF WELLS

<u> </u>	Subsequent Report of Water Shut-off
	Subsequent Report of Shooting, Acidizing, Cementing
L X	Subsequent Report of Altering Casing
<u> </u>	Subsequent Report of Redrilling or Repair
	Subsequent Report of Abandonment
1	Supplementary Well History
X	Report of Fracturing
 ^ -	Report of Fracturing
	x

(Indicate Above by Check Mark Nature of Report, Notice, or Other Data)

		*** ***********************************	September	<u> </u>
Following is a notice of intention of intentions	n to do work on land	RYCORGE described as 1	follows:	
•		LEASE	Huber	
MONTANA (State)	F	Cosevelt	East Po	plar
		• •		-
Well No. 4 NENW	Section 10	28 North	51 East	
	(m. sec.)	(Township)	(Range)	(Meridian)
The well is located660	ft. from $\left\{ egin{array}{l} N \\ X \end{array} \right\}$ line and	1980 ft from	E {line of Sec]	.0
LOCATE WELL SITE ACCURATE	ELY ON PLAT ON BACK	OF THIS FORM.	•	
The elevation of the ground or K.J	B. above the sea level is	2091' KB .		
READ CAREFULLY	DETAILS OF I	PLAN OF WORK	REA	D CAREFULLY
(State names of and expected dept important proposed work, particularly	hs to objective sands; show size all details of Shooting, Acidiz	r, weights, and lengths of prop inz. Fracturing.)	ensed casings, cementing	points, and all other
	T) TOTAL 1 C	OP WORK		

DETAILS OF WORK RESULT

The subject well is perforated in the Judith River formation at 830' - 850' as a shut in salt water disposal well. The Huber #4A, located 50 feet east of the subject well, has water leaking into its' cellar.

The water is believed to be either entering the well at the perforations and flowing up the tubing-casing annulus through a cement basket with a leak in the casing or up the tubing and out a leak in the tubing and casing, or up a channel behind the surface pipe on either the Huber #4 or #4A from some outside source.

It is proposed to set a packer at ±800' and check tubing for flow. Pressure test annulus to 750 psi for 15 minutes. Locate casing leak if necessary. Squeeze perforations with 100 sxs Class "G" cement and casing leak with same if necessary. Cut off casing 2 feet below plow depth and set 10 sack surface plug.

Approved subject to conditions of	on reverse of form
Date Oct /3/982	
By W S Ologia District Office Agent	9:000
District Office Agens	Title //

By Donald C. Smith

Title Senior Operations Engineer
Three Park Central, Ste. 333, 1515 Arapahoe
Address Denver, Colorado 80202

BOARD USE ONLY API WELL NUMBER

المعادية

والمحتمد

1

NOTE —Reports on this form to be submitted to the appropriate District for approval DRILLING PERMIT EXPIRES 90 DAYS FROM DATE OF APPROVAL. UPON WRITTEN REQUEST PRIOR TO EXPIRATION DATE, ONE 90 DAY EXTENSION MAY BE GRANTED.

Form No. 7

NOTICE THIS FORM BECOMES A PERMIT WHEN STAMPED APPROVED BY AN AGENT OF THE BOARD,

BOARD OF OIL AND GAS CONSERVATION OF THE STATE OF MONTANA BILLINGS OR SHELBY

BILLINGS

MAC 36-3.18(10)-S18020 AAC 36-3.18(10)-S18030 ACC 36-3.18(10)-\$18030

ACC 36-3.18(10)-\$18140

ACC 36-3.18(10)-\$18140

ACC 36-3.18(10)-\$18140

ACC 36-3.18(10)-\$18140

ACC 36-3.18(10)-\$18310

ACC 36-3.18(10)-\$18330

ACC 36-3.18(10)-\$18330

ACC 36-3.18(14)-\$18380

SUNDRY NOTICES AND REPORT OF

. • • • • • • • • • • • • • • • • • • •	
Notice of Intention to Drill	Subsequent Report of Water Shut-off
Notice of Intention to Change Plans	Subsequent Report of Shooting, Acidizing, Cementing
Notice of Intention to Test Water Shut-off	Subsequent Report of Altering Casing
Notice of Intention to Redrill or Repair Well	Subsequent Report of Redrilling or Repair
Notice of Intention to Shoot, Acidize, or Cement	Subsequent Report of Abandonment
Notice of Intention to Pull or Alter Casing	Supplementary Well History
Notice of Intention to Abandon Well (SW.7)	Report of Fracturing
	}

Į.			<u> </u>	<u> </u>			
	. (1	ndicate Above by Ci	eck Mark Nat	ure of Rep			
				•••	October	12	
Follow	ving is a) notice of inte	ntion to do work	on land	-pwncd leased	described as	follows:	
					LEASE	Huber	· phino · · · · · · · · · · · · · · · · · · ·
			Poo	compl+		Doct 7	.
••••••	(State)	*******************************	·	(County)	*************	East F	Oplar Field)
317-11 1		10		28	3 North	51 Fact	
	No	(m. sec.)				51 East (Range)	
The w	ell is located660	ft from	line and	1980	ft. from	E line of Sec	10 .
LOCA	TE WELL SITE ACCUR	ATELY ON PLAT	ON BACK (OF THIS I	FORM.		
The el	evation of the ground or	K.B. above the se	a level is	2091	L'KB		
	-						
	CAREFULLY		TAILS OF P				EAD CAREFULLY
(S import	tate names of and experted of ant proposed work, particulations.	lepths to objective so arly all details of St	nds; show size. Puling, Acidizi	weights, a ng. Fractui	ind lengths of pro ring.)	posed casings, cementing	ng points, and all other
			DETAILS RES	OF WOR	LK.		
Gra	ce Petroleum Corpo	ration plans	to plug a	nd abar	ndon well #	4 as follows:	
	•						•
1	,, - ,	30' cement.plu	g or cut	tubing	@ 700'.	•	
2	•	close to perfo	rations a	is possi	ible. (Per	fs @ 830-850')	• '
ر	Check for fluid leak if necessar	is suct in the con	omg. Pre	ssure t	test casing	to 750#. Loca	ate
4) Squeeze perfs v		Class "G	n comer		•	
5) Squeeze casing	leak if neces	sarv with		rs Clase "G	ⁿ comen≠	
6) Cut casing 2'1	pelow plow der	oth & clea	in upolo	cation.	cenent.	
. (7	Set 5 ups	sen top or	Tovio				
• (7	, , ,	1 7	, v			•	
	•		,			ſi	
Appro	oved subject to condition	as on reverse of f	orm ·	Com	PANY GRACE	PETROLEUM CORP	ORATION
Date	OCT 2 5 1982 .			Ву	Honal	C. Smith	uh_
By	Saus Xhu	when done		Title		Operations En	Tineer
-,	District Office Ag	int Title	- Thur To a The garage age a se	21116		Central, Ste.	
	J.	Y '		Add	ress <u>1.5.15</u> _A	rapahoe Street	

BOARD USE ONLY API WELL NUMBER

Denver, 00 80202 NOTE:—Reports on this form to be submitted to the appropriate District for approval DRILLING PERMIT EXPIRES 90 DAYS FROM DATE OF APPROVAL. UPON WRITTEN ON THE ONE ON THAY EXTENSION MAY BE GRANTED.

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	water; and	% eediment	DO (A) 11	hoke lis	(∩# f1	owing nres	% emulsion;
	water; and	% eediment	10/64" d	hoke 45	0# fl	owing pres	sure.
If gas well, o	cu. ft. per 24 hour te per 1,000 cu. ft.	% eediment.	10/64" c	hoke 45 pressure, 1bs	0# fl	owing pres	ssure.
If gas well, o	cu. ft. per 24 hour	% ediment.	10/64" c	hoke 45 pressure, 1bs	0# fl	owing pres	sure.
If gas well, c	water; and	of gas	10/64" c	hoke 45 pressure, lbs	50# fl .:per sq. :	owing pres	ssure. Note: The cure
If gas well, a Gallons gasolin	cu. ft. per 24 hour e per 1,000 cu. ft.	of gas	10/64" c	pressure, lbs	O# fl .:per sq. i	owing pres	sure.
II gas well a Gallons gasolin John	cu. ft. per 24 hour se per 1,000 cu. ft.	of gas	10/64" cock	hoke 45 pressure, lbs	O# fl	owing pres	Cuc Driller.
If gas well a Gallons gasolin Gallons gasolin Gallons gasolin Gallons Gasolin Gallons	water; and cu. ft. per 24 hour se per 1,000 cu. ft.	of gas	10/64" con Rock EMPLOYEE TOF OIL OR	hoke 45 pressure, lbs	50# f1	owing pres	Drue.
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Form No. 110

CUSTOMER'S COPY

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WORK ORDER ONTRACT

INVOICE & TICKET NO 023 203

Mondin -				:	DATE 41	23-27	· · · · · · · · · · · · · · · · · · ·
BURTON SERVICES YOU ARE HEREBY REQU	JESTED TO F	URNISH E	QUIPMENT A	AND SERVI	CEMEN TO	DELIVER AN	D OPERATE
SAME AS AN INDEPENDENT CONTRACTOR TO:	Phi	01	Corp		<u> </u>		
DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIAL	S FOR THE	PURPOSE	OF SERVICI	MER) *			
4D LEASE E. P. U.		, SEC.	10	TWP	78.W .	RAN	GE <u>518</u>
Pill COUNTY Proposed + ST	ATE MAIS	+	OWNED	ву <u>5 с</u>	mp	···	<u>, ; </u>
THE FOLLOWING INFORMATION WAS	FURNISHE		E CUSTO	MER OR	HIS AGEN	Τ .	
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'ROD; OIL BPD, H20 BPD, GAS MCF	PERFORAT	IONS		·			
TREATMENT: DATETYPE	u		MATERIA	LS	•		• •
T INSTRUCTIONS: TREAT THRU TUBING ANNULUS C	ASING [] TUE	ING/ANN			ORSEPOWE	RORDERED	
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OR HIS AGENT STATES THE WELL IS IN PROPER CONDIT				NCED.	MATERIAL	S AND SER	VICES
ition, the above named Customer agrees: falliburton in accord with the rates and terms stated in Hallibu	rton's current i	nrice lists.					
on shall not be responsible for and Customer shall secure Ha	Hibucton again	st any liat	ollity for dan	lage to prop provision a	arty of Custo	omar and of ut not limite	the well owner
and surface damage arising from subsurface damage. r shall be responsible for and secure Halliburton against any lia ntrol of the well and/or a well blowout, unless such loss or dam	bility for reser	voir loss o	r damage, or :	property da	nage resultin	، a from subsc	irtace pressura.
r shall be responsible for and secure Halliburton against any the nature thereof, arising from a service operation performed	and all liability	of whats	aaver nature				
· shall be responsible for and secure Halliburton against any ty (including, but not limited to, injury to the well), or any da	liability for injumages whatsoe	ury to or d	eath of perso	e, growing (out of or in a	ny way conr	ton, or damage rected with the
ioactive material in the well hole, unless such damage shall be on makes no guarantee of the effectiveness of the products, su	pplies or mater	ials, nor o	the results o	d any treatn	nent or service	e. '	•
snall, at its risk and expense, attempt to recover any Hallib Instruments are not recovered. Customer snall pay Halliburi	urton equipme	ment cost	or instrument	s which are	lost in the a	well and if s egligence of	uch equipment, Halliburton, If
snall, at its risk and expense, attempt to recover any Hallib Instruments are not recovered. Customer shall pay Halliburian, equipment, tools or instruments are damaged in the well, damage is caused by the sole negligence of Halliburton. It is the foregoing, be fully responsible for loss of or damage to Sustemer at the landing until returned to the landing, unless st	n the case of o any of Hallit	equipmen ourton's eq	t, tools or in	ser of its re struments f is or instruc	placement co or marine op nants which	erations, Cu occurs at any	trof repairs un- stomer shall, in time after de-
if the uncertainty of variable well conditions and the necessithe accuracy of any chart interpretation, research analysis, joi	ty of relying or	n facts and	supporting's	ervices furn	ished by other	ers, Halliburt	on is-unable to
efforts in gathering such information and their bost judgme from the use of such information except where due to in warrants only little to the products, supplies and materials	Halliburton's q	gross negliç	ence or willf	ul miscondu	ct in the pro	paration,or f	urnishing of it.
in warrants only title to the products, supplies and materials ITIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY (TELY PRECEDING SENTENCE. Halliburton's liability and ty or otherwise) arising out of the sale or use of any production on their return to Halliburton or, at Halliburton's option in be liable for special, inclaental, indirect, punitive or consequence.	fitness of Customer's of Customer's or its, supplies or its to the allowauential gamage	R OTHER exclusive r materials lence to the es.	tWISE WHIC emedy in any is expressly li Customer o	H EXTEND / cause of a mited to the f credit for	D BEYOND ction (wheth s replacement the cost of su	THOSE STA	ATED IN THE ct. lort, breach ducts, supplies ino event shall
tomer's default in the payment of Customer's account 60 dit becomes necessary to employ an attorney to enforce colle	lays after date	of invalce	, such account	t will there:	ifter bo subje	ct to interes	t until paid. In
n shall not be bound by any changes or modifications in lexacutive officer of Halliburton.			hara such ci	ange or m	odification is		
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WORK ORDER CONTRACT | AND PRE-TREATMENT DATA

INVOICE & TICKET NO. 225058

DISTRICT Glovelive		,			DATE	7-13-7	77
TO: HALLIBURTON BERVICES YOU ARE HEREBY REQU	ESTED TO FU	RNISH E	QUIPMENT.	ND SERVIC	CEMEN TO	DELIVER AT	OPERATE
THE SAME AS AN INDEPENDENT CONTRACTOR TO: YELL P	Ly B.	261-					
AND DELIVER AND SELL PRODUCTS, SUPPLIES, AND MATERIAL	,	URPOSE	OF SERVICE	MER) NG			
WELL NO. 1D LEASE FPU		6EC		TWP		RAN	GE
Par.	44		_			•	
THE FOLLOWING INFORMATION WAS						NT	
FORMATION		NEW	WEICHT	GIZE	FROM	70	MAX. ALLOW.
PORMATION TYPE	CASING		122 5	51/2	3100	20-11	-
PACKERI TYPE SET AT.	LINER				27.1.83.		
TOTAL DEPTHMUD WEIGHT	TUBING	13	6.3-	12%	0	3473	
DORE HOLE	OPEN HOLE	·	• • • • • • • • • • • • • • • • • • •	<u> </u>			внотs/гт.
	PERFORATI	008					
	PERFORATI	оив					
PRESENT PROD: OILBPD, H2OBPD, GASNCF	PERFORATI	0116			 	 	
PREVIOUS TREATMENT: DATETYPE			MATERIA	<u>.</u>			· · ·
TREATMENT INSTRUCTIONS: TREAT THRU TUBING K ANNULUS CA					ORSEPOWE	R ORDERED	
- Cump 18 13th H.D. SOD Got Solve	TO	<u> </u>	_mias_	500 0	ENL H	cle	LEU si
Then 1000 GAL HE ON 12 BKL wind	`						
CUSTOMER OR HIS AGENT STATES THE WELL IS IN PROPER CONDITI	ON TO RECEI	VE THE	PRODUCTS.	SUPPLIES	MATERIAL	S. AND SER	VICES
THIS CONTRACT MUST BE					- AVEINAL	. AND DE	
As consideration, the above-named Customer agrees: (a) To pay Halilburton in accord with the rates and terms stated in Halilbu							
(b) Halliburton shall not be responsible for and Customer shall secure Halli secure Hall different from Customer), unless caused by the willful misconduct damage and surface damage arising from subpurface damage.	iliburton again or gross neglige	st any liat ince of Ha	ollity for dar Hiburton, thi	naga to prop s provision a	erly of Cus	tomer and pl	the well owner
(c) Customer shall be responsible for and secure Halliburton against any lize losing Control of the well and/or a well blowout, unless such loss or dan	bility for reser	voir loss o	r damage, or	property da	mage resulti	ng from subs	urfaco pressure
(d) Customer shall be responsible for and secure Halliburton against any action in the nature thursel, arising from a service operation performed	and all liability	of whats	ogver nature	for damage	s as a result	of subsurfac	p trespass, or ar
(e) Customer shall be responsible for and secure Halliburton against any to property (including, but not limited to, injury to the well), or any de use of radioactive material in the well hole, unless such damage shall be	ilability for injustmages whatsou caused by the	ury to or cover, irresp willful mis	teath of perse ective of cau conduct or g	ens, other th se, growing c ross negliger	an employe out of or in nce of Hallit	os of Hallibur any way con jurton,	rton, or damage nected with the
(f) Halliburton makes no guarantee of the affectiveness of the products, su	pplies or mater	lais, nor o	f the results (of any treatm	nent or serv	ico.	
(ii) Customer shall, at its risk and expense, attempt to recover any Hallibt tools or Instruments are not recovered. Customer shall pay Hallibur Halliburton equipment, tools or instruments are damaged in the well, less such damage is caused by the sole negligence of Halliburton. I addition to the foregoing, be fully responsible for loss of or damage is livery to Customer at the landing until returned to the landing, unless so	ton its replace Customer shall in the case of o any of Halling	ment cost pay Halli equipmen outton's eq	unless such burton the le t, tools or in julpment, too	loss is due to ssar of its re- struments for its or instruments	o the sole in placement cor marine on ments which	ost or the co perations. Co occurs at an	Halliburton, II st of repairs un- listomer shall, in y time after de-
(h):Because of the uncertainty of variable well conditions and the necessi guarantee the accuracy of any charf interpretation, research analysis, joi their best efforts in gathering such information and their best judgme damagds arising from the use of such information except where due to	ty of relying or or recommendation	ion or oth	supporting	ervices furn	ished by our	ers, Hallibur	rsonnet will use
(i) Haliburton warrants only tiltle to the products, supplies and materiels WARRANTIES, EXPRESS OR IMPLIED OF MERCHANTABILITY IMMEDIATELY PRECEDING SENTENCE. Haliburton's liability an of warranty or otherwise) arising out of the sale or use of any produce or materials on their return to Haliburton or, at Haliburton's option Haliburton be liable for special, incidental, Indirect, punitive or conseq	and that the sa ', FITNESS Of d Customer's e cts, supplies or , to the allowa uential damage	mo are from ROTHER EXCLUSIVE FOR THE MATERIALS IN THE SECOND SECO	is from defectivisE whice of the control of the con	ts in workm HEXTEND Course of a mited to the foredit for i	anship and : BEYOND ction (whote replacement in the cost of s	materials. TH THOSE STA her in contra nt of such pro uch items. It	HERE ARE NO ATED IN THE ict, tort, breach oducts, supplies n no event shall
(j) Upon Customer's default in the payment of Customer's account 60 of the event it becomes necessary to employ an attorney to enforce colleamount of 20 per cent of the amount of the unpaid account.	ction of such 2	ccount, C	ustomer agre	s to pay all	collection c	osts and atto	rney fees in the
(k) Halliburton shall not be bound by any changes or modifications in authorized executive officer of Halliburton.							
	THAT	AM AYE	4	SIGN	EAME AS	CUSTOMER	S AGENT
				CU	STOMER		
	DATE	2-	18-77	<u> </u>			
We certify that the Fair Labor Standards Act of 1938, as amended, has been compile in the production of goods and/or with respect to services furnished under this co	d with	051	<u>></u> A.M.	PrMT.			

		SERVIC	ES	WELL	. 110_	411	_ LEASE	FPU TICKET NO. 225054
J	OB LO	OG		276	DMER.	Meco	hy a	- PAGE NO. /
FORM 201	• 0-2			T·aot	YPE _	Mrs Q		DATE 9-13-77
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P.O. DRAWER 1431 DUNCAN, OKLAHOMA 73533

FIELD TICKET 225058

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	•			TYPE AND PUR			WELL TYPE	41		<u> </u>
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EXTRA COPY

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WORK ORDER CONTRACT

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	ATTACH TO		• ~	<u> </u>		
				1 5	4/20	<i>-</i> :
- 11	IVOICE & TICKE	T NO	. 62	or	700	_

YOU ARE HEREBY REQUESTED TO FURNISH EQUIPMENT AND SERVICEMEN TO DELIVER AND SAME AS AN INDERENDENT CONTRACTOR TO: Mar SEC RANGE COUNTY " RESCUE TE STATE OWNED BY THE FOLLOWING INFORMATION WAS FURNISHED BY THE CUSTOMER OR HIS AGEN Y. ALLO FROM NEW USED WEIGHT - 4 - 22 51 960 980 u LINER , мур[‡]weight. 960 TUBING SHOTS/FT. 980 BPD, H2O . .: _____BPD, GAS. ROD: QIL PERFORATIONS 965 ラムム PERFORATIONS OIL, BPD, HiO: BPD, GAS A. PERFORATIONS TREATMENT- > DATE MATERIALS NT INSTRUCTIONS:-TREAT THRU TUBING KANNULUS CASING TUBING/ANNULUS HYDRAULIC HORSEPOWER ORDERED R'OR HIS AGENT STATES THE WELL IS IN PROPER CONDITION TO RECEIVE THE PRODUCTS, SUPPLIES, MATERIALS, AND SERVICES THIS CONTRACT MUST BE SIGNED BEFORE WORK IS COMMENCED deration, the above-named Customer agrees: y Halliburton in accord with the rates and terms stated in Halliburton's current price lists. nurton shall not be responsible for and Customer shall secure Halliburton against any liability for damage to property of Customer and of the well owner ifferent from Customer), unless caused by the willful misconduct or gross negligence of Halliburton, this provision applying to but not limited to subsurface ge and surface damage arising from subsurface damage. ge and surface damage arising from subsurface damage.

mer shall be responsible for and secure Halliburton against any llability for reservoir loss or damage, or property damage resulting from subsurface pressure, control of the well and/or a well blowout, unless such loss or damage is caused by the willful misconduct or gross negligence of Halliburton. mer shall be responsible for and secure Haliburton against any and all liability of whatsoover nature for damages as a result of subsurface trespass, or an in the nature thereof, arising from a service operation performed by Haliburton hereunder.

mer shall be responsible for and secure Halliburton against any Hability for injury to or death of persons, other than employees of Halliburton, or damage sperty (including, but not limited to, injury to the well), or any damages whatsoever, irrespective of cause, growing out of or in any way connected with the radioactive material in the well hole, unless such damage shall be caused by the willful misconduct or gross negligence of Halliburton.

urton makes no guarantee of the effectiveness of the products, supplies or materials, nor of the results of any treatment or service.

mer shall, at its risk and expense, attempt to recover any Halliburton equipment, tools or Instruments which are lost in the well and if such equipment or instruments are not recovered. Customer shall pay Halliburton its replacement cost unless such loss is due to the sole negligence of Halliburton. If urton equipment, tools or instruments are damaged in the well. Customer shall pay Halliburton the losser of its replacement cost of the cost of repairs unich damage is caused by the sole negligence of Halliburton. In the case of equipment, tools or instruments for marine operations, Customer shall, in on to the foregoing, be fully responsible for loss of or damage to any of Halliburton's equipment, tools or instruments which occurs at any time after detocustomer at the landing until returned to the landing, unless such loss or damage is caused by the sole negligence of Halliburton.

se of the uncertainty of variable well conditions and the necessity of relying on facts and supporting services furnished by others. Halliburton is unable to tee the accuracy of any chart interpretation, research analysis, job recommendation or other data furnished by Halliburton. Halliburton personnel will use the section of the use of such information and their best judgment in interpreting it, but Customer agrees that Halliburton shall not be responsible for any jet arising from the use of such information except where due to Halliburton's gross negligence or willful misconduct in the preparation or furnishing of it.

urton warrants only title to the products, supplies and materials and that the same are free from defects in workmanship and materials. THERE ARE NO RANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE WHICH EXTEND BEYOND THOSE STATED IN THE DIATELY PRECEDING SENTENCE. Halliburton's liability and Customer's exclusive remedy in any cause of action (whether in contract, tort, breach ranty or otherwise) arising out of the sale or use of any products, supplies or materials is expressly limited to the replacement of such products, supplies the claims on their return to Halliburton or, at Halliburton's option, to the allowance to the Customer of credit for the cost of such items. In no event shall urton be liable for special, incidental, indirect, punitive or consequential damages.

Customer's default in the payment of Customer's account 60 days after date of invoice, such account will thereafter be subject to interest until paid. In ent it becomes necessary to employ an attorney to enforce collection of such account, Customer agrees to pay all collection costs and attorney fees in the it of 20 per cent of the amount of the unpaid account.

arton shall not be bound by any changes or modifications in this contract, except where such change or modification is made in writing by a duly ized executive officer of Halliburton.

HAVE READ AND UNDERSTAND THIS CONTRACT AND REPRESENT THAT I AM AUTHORIZED TO SIGN THE SAME AS CUSTOMER'S AGENT

DATE 1-23-18

TIME 2/30 P.M

at the Fair Labar Standards Act of 1938, as amended, has been camplied, with ction of goods and/or with respect to services furnished under this contract.

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BUHTON SERVICES



WORK ORDER CONTRACT

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WELL NO. 4-D LEASE J Papla III TICKET NO. 225487 JOB LOG Murphy O.1 Co JOB TYPE Squilkzt PRESSURE (PSI) DESCRIPTION OF OPERATION AND MATERIALS TIME T C TUBING CASING Priss Britaide 10:118 1 500 Fotoblish Jug Rate 2000 Mix Cont 2 % 2015 1 1500 500 Displace 3 11:18 1250 500 14 5-105E 1000 500 -25 1 // 515gE 11:35 500 1000 ١,٠ 11:43 STATE 1000 500 41 11:52 1000 500 5tage 4 14 800 <u> 500</u> Stage 4, 14 Stage 12:58 8:00 500 13:27 Rillings 800 PRESSURE tubing 13:53 500

CUSTOMER

HAL	LIBURTO	N SE	RVICES
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WELL HO 40 LEASE F. F. O. 11. 7 TICKET NO. 225 USG

C. SMER M. 1. 26 1. 0. 1 C. PAGE NO.

JOB TYPE 5, 116126 DATE 1-23-78

FORM 15	1 R+2			JOBIT	YPE _	5, 116,26		DATE 1-33-78
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CUSTOMER

3131 No



INDUSTRIAL SYSTEMS, INC

P O. BOX 20176 BILLINGS, MONTANA 59104

406-252-6671

DATE June 5, 1978

SOLD TO

SHIP TO

Hurphy 011 Box 547 Poplar, Mr 59255

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			- 1		Voluments	Leuroco	
P. O. NO.		[]		TERMS	DATE SHIPPED	SHIPPED VIA TOTAL	
	Verbal		1271	net 30	5-30-78	VIA UPB	
	QUAN. SHIPPED	BACK ORDER		DESCRIPT	NOI	· UNIT PRICE	AMOUNT
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	1		Tungsten Ce relapped.	rbide Rotati	ing element to be	•	
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Please pay from invoice: No statement will be rendered unless requested. No credit will be allowed for any merchandise returned unless authorized. All accounts not paid in 30 days will be subject to a 1½% per month service charge. The Annual percentage rate for this charge is 18%.

SERVICE SUPERVISOR'S PK ٠<u>....</u> ران. دار DATES TOOLS TOTAL DAYS DATES AND PROGRESS OF WORK LEASE Received listed Tools BIRATION ZOTON BALL H. W/OVERSHOT TIGHTS FLASTIC THE LUYS FLAR, HUIST ã. 5 Tellow Triff 3 775 Š ICK OKLAHOMA CITY





REPORT OF WATER ANALYSIS

Murphy Oil Corporation Poplar, Montana From

Analysis Date 6-2-77

Sample Marke

4-D S.W.D.

MILLIGRAMS PER LITER	
Chloride (as NaCl)	115,000
Total Hardness (as CaCO ₃)	3,000
Calcium Hardness (as CaCO ₃)	2,300
Total Alkalinity (as CaCO ₃)	M-330
Acidity to Phenolphthalein (as CaCO ₃)	150 .
Sulfate (as Na ₂ SO ₄)	53
Total Iron (as Fe)	2.3
Suspended Solids	
Precipitated By Sulfate (as BaSO ₄)	
Turbidity (SiO ₂)	70
pH	6.8
Specific Gravity	
	R.J. Gray

Analyst

NALCO CHEMICAL COMPANY VISCO CHEMICALS

P. O. BOX 87 . SUGAR LAND, TEXAS 77478

ademarks of Nalco Chemical Company.

Form 5-29



ANALYTICAL SERVICE LABORATORY REPORT

MICROBIOLOGICAL ANALYSIS

Company

Murphy Oil Corporation

Date

6-30-77

.Plant

.Date Received Lab. 6-21-77

Address

Poplar, Montana

Sampling Point

1 4-D S. W. D.

II III Date Sample Number 6-5-77 77V-524

FIELD INOCULATED (Colonies/ml.)

	FIELDIN	OCOLA I LD (COR	011163/1111.)
	SAMPLEI	SAMPLE II	SAMPLE III
Desulfovibrio (Sulfute Reducing Bacteriu)	1-10		_
Total Aerobic Bacteria .————————————————————————————————————	Less Than		

REMARKS

Sample I

Sample II

Sample III

R. J. Gray (D. C. Johnson

£g

E. S. Settmann 2

P. D. BOX 87 • SUGAR LAND, TEXAS 77478

NALCO CHEMICAL COMPANY

trademarks of Naico Chemical Company.

REGIONAL ANALYTICAL LABORATORIES

2111 E. Dominguez St. Carson, CA 90745

6216 W. 66th Place Chicago, Illinois 60638 Box 16A Paulsboro, NJ 08066 Box 87

Sugar Land, TX 77478

£-73111

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WATER ANALYSIS

Company:

MURPHY OIL CORPORATION

POPLAR, MONTANA DIST.21

Date Printed

13-Nov-80.

Analysis No. Date Sampled Date Received

80VI 708,A 11/03/80

11/13/80

Sample Marked:

E.P.U. 4-D

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DISSOLVED SOLIDS	***WATER ANA	LYSIS***	SESHITS /	AS COMPOUNDS
CATIONS Sodium, Na(calc.)	mg/l	me 1</td <td>KESUEIS A</td> <td>mg/l</td>	KESUEIS A	mg/l
Calcium, Ca	43400.	1890.	0.000	
Magnesium,Mg	1000.	50.0	as CaCO3	2500.
Barium, Ba	.0	16.0	as CaCO3	800.
, , , , , , , , , , , , , , , , , , ,	•0	•.0	as BaS()4	.0
Sum of Cations	44600 -	1950.		
ANIONS			•	
Chloride,Cl	68000.	1920 •-	as NaCl	112000.
Sulfate, SO4	1550.	324	as Na2S()4	2300.
Carbonate,C03	212		· as CaC()3	
Bicarbonate, HCO3	317.	5.2	as CaC()3	260 .
Sum of Anions	¹ 69900.	1950.		
TDS CALCULATED	114000		•	
Total Iron,Fe	5	•.0	as. Fe	, -5
Acid to Phen,CO2	58.1	1.3	as CaC()3	1.32 🔐
OTHER PROPERTIES		CaCO3 STAE	BILITY Ca	SO4 SOLUBILIT
pH (units)	6.4	(Index)	A. 700	(meq/l)
Spec Gravity	1.070	•	® 70⊞ @120F	
Turbidity (jtu)	30.0		@170F	
	marks=		3110.	

trademarks of Nalco Chemical Company.

NALCO CHEMICAL COMPANY

REGIONAL ANALYTICAL LABORATORIES

6216 W. 66th Place

Box 16A

Box 87

es jeno tar

2111 E. Dominguez St. Carson, CA 90745

R. J. GRAY M. R. OLSON

Chicago, Illinois 60638

Paulsboro, NJ 08066

Sugar Land, TX 77478

P. O. BOX 87 . SUGAR LAND, TEXAS 77478

COMPANY: Murphy Oil Corporation

Attachment

REPORT NO: 83C-349

DATE: 3/15/83

COUPON NUMBER	WEIGHT	OF	DEPOSIT (mg)
02868		104	4.6
03001		9	7.5
03024		6.5	5.6
03025		34	4.0
03650		86	5.2
03651		76	6.1
03652		52	2.2



COUPON REPORT

Company

Murphy Oil Corporation

Address

Poplar, Montana

Date

3/15/83

Report No.

83C-349

Page 2 of 2

COUPON LOCATION	PERIOD EXPOSED	CHEMICAL IN USE	COUPON NUMBER	CORROSION RATE (mpy)	TYPE OF CORROSION
5-D	2/03/83 to 3/10/83	Visco 3410	03024	0.7	
6-D	2/03/83 to 3/10/83	Visco 3410 & Visco 1111	03001	3.7	Pitting

 $MPY = \frac{\text{(Area factor)} \times \text{(wt. loss in mg)}}{\text{(Days exposure)}}$

One mpy = 0.001 inch per year

FORM S-4

NALCO CHEMICAL COMPANY

ANALYTICAL LABORATORIES

P. O. Box 220 Long Boach, CA 90801 1927 Note Drive Paulsboro, NJ 08066 Box 87 Sugar Land, TX 77478 1801 Diehl Road Naperville, IL 60566

Form PS-108 (40M 12-82)



LCOUPON REPORT

Company

Murphy Oil Corporation

Address

Poplar, Montana

Date

3/15/83

Report No.

83C-349

Page 1 of 2

COUPON LOCATION	PERIOD EXPOSED	CHEMICAL IN USE	COUPON NUMBER	CORROSION RATE (mpy)	TYPE OF CORROSION
Courchene SWD	9/30/82 to · 3/08/83	Visco 3901	03650	1.9	General Etch
Lillian SWD	9/30/82 to 3/08/83	Visco 3901 & Visco 1111	01936	14.0	Pitting
Hull Creek Treater	9/30/82 to 3/08/83	Visco 3901	02170	0.3	
l-D East Line	2/03/83 to 3/10/83	Visco 3410	03025	0.8	
l-D West Line	2/03/83 to 3/10/83	Visco 3410	02868	1.7	General Etch
3-D	2/03/83 to 3/10/83	None	03651	. 5.0	General Etch
√ 4-D	2/03/83 to 3/10/83	Visco 3410	03652	1.2	General Etch
$MPY = \frac{\text{(Area factor)} \times \text{(wt. }}{\text{(Days exposure})}$	loss in mg)	400	c: H. A. /mkh	Pederson	(W/C)

(Days exposure)

One mpy = 0.001 inch per year

NALCO CHEMICAL COMPANY ANALYTICAL LABORATORIES

Form PS-108 (40M 12-82)

P. O. Box 220 Long Beach, CA 90801 1927 Notte Drive

Paulsboro, NJ 08066

Sugar Land, TX 77478

1801 Diehl Road Naperville, IL 60566



COUPON REPORT

Company

Murphy Oil Corporation

Address

Poplar, Montana

Date

5/10/83

Report No. 83C-605

				•	
COUPON LOCATION	PERIOD EXPOSED	CHEMICAL IN USE	COUPON NUMBER	CORROSION RATE (mpy)	TYPE OF CORROSION
I-D West Line	3/10/83 to 5/05/83	Visco 3410	03017	1.6	General Etch
3-D	3/10/83 to 5/05/83	None	03016	0.8	
4 – D	3/10/83 to 5/05/83	Visco 3410	03015 .	0.9	
5-D	3/10/83 to 5/05/83	Visco 3410	03011	0.4	
6-D	3/10/83 to 5/05/83	Visco 1111 & Visco 3410	03012	3.4	Pitting

4cc: H. A. Pederson

DJK

/dg

MPY = (Area factor) x (wt. loss in mg)
(Days exposure)

One mpy = 0.001 inch per year

FORM S-4

Form PS-108 (40M 12-82)

NALCO CHEMICAL COMPANY

ANALYTICAL LABORATORIES

P. O. Box 220 Long Beach, CA 90801 1927 Nolle Drive Paulsboro, NJ 08066 Box 87

Sugar Land, TX 77478

1801 Diehl Road Naperville, IL 60566



>> COUPON REPORT <<

Company: MURPHY OIL CORPORATION Address: POPLAR, MONTANA

Print date: 6/14/83 Report No. 83C-783

Page 1 of 1

COUPON LOCATION	EXPOSURE PERIOD	CHEMICAL IN USE	C D U P O N N U M B E R	CORROSION RATE (mpy)	.TYPE OF CORROSION
3-0	05/05/83 to 06/08/83	VISCO 3410	04129d	0.8	
1-D WEST LINE	05/05/83 to 06/08/83	VISCO 3410	04125d	1.0	Gen. Etch
4-D	05/05/83 to 06/08/83	VISCO 3,410	04130d	1.5	Pitting
5-0	05/05/83 to 06/08/83	VISCO 3410	04150d	0 • 5	
6-0	to	VISCO 3410 & VISCO 1111	04125d	1.3	Gen. Etch

d See Deposit Weight Attachment

NALCO CHEMICAL COMPANY

Form PS-108 (40M 12-82)

ANALYTICAL LABORATORIES

P. O. Box 220 Long Beach, CA 90801 1927 Nolle Drive Paulsboro, NJ 08066

Sugar Land, TX 77478

1801 Diehl Road Naperville, IĻ 60566



1000 115 CF (12. 1 . 1 . 1

ANALYTICAL LABORATOR

>> COUPON REPORT <<

Company: MURPHY OIL Address: POPULAR, MONTANA

Print date:11/ 1/83
Report No. 83C-1527

Page 1 of 1

COUPON LOCATION	EXPOSURE PERIOD	CHEMICAL IN USE	COUPON NUMBER	CORROSION RATE (mpy)	TYPE OF CORROSION
3-0	08/05/83 to 10/26/83	NONE	01698d	1.1	Gen. Etch
4-D	08/05/83 to 10/26/83	VISCO 3410	01697d	2.3	Pitting
5-0	08/05/83 to 10/26/83	VISCO 3410	01693d	1.2	Pitting
6-D WATER DISPOSAL	08/05/83 to 10/26/83	VISCO 1111 E VISCO 3410	01694d	1.5	Pitting
LILLIAN SWD	10/04/83 to 10/26/83	VISCO 1111 & VISCO 3410	06935	1.7	Gen. Etch

d See Deposit Weight Attachment

NALCO CHEMICAL COMPANY **ANALYTICAL LABORATORIES**

Form PS-108 (40M 12-82)

P. O. Box 220 Long Beach, CA 90801 1927 Nolte Drive Paulsboro, NJ 08066 Sugar Land, TX 77478

1801 Diehl Road Naperville, IL 60566



ANALYTICAL BORATORY

>> COUPON REPORT <<

Company: MURPHY OIL CORPORATION Address: POPLAR, MONTANA

Print date: 2/ 3/84 Report No. 34C-102

Page 1 of 1

COUPON LOCATION	EXPOSURE PERIOD	CHEMICAL IN USE	COUPDN RD4UCS	CORROSION	TYPE OF
			113H3CX	RATE (mpy)	CORROSION
3-D	10/26/83 to 01/25/84	VISCO 3410	01656d	0.7	
4-0	10/26/83 to 01/26/84	VISCO 3410	04074a	12.3	Pitting
5-D SWD	10/26/83 to 01/26/84	VISCO 3410	04202d	. 0.4	
סשט פ-י	19/27/83 to 01/26/84	VISCO 1111 & VISCO 3410	04315d	0.5	·

‡‡ See Note Attacnment d See Deposit Weight Attachment

NALCO CHEMICAL COMPANY

ANALYTICAL LABORATORIES

1927 Notic Drive ach, CA 90801

ox 220

Box 87

Paulsboro, NJ 08066.... Sugar Land, TX 77478

Form PS-108 (40M 12-82)

1801 Diehl Road Naperville, IL 60566 ...



>> COUPON REPORT <<

Company: MURPHY DIL Address: POPULAR, MCNTANA

Print date: 3/12/84 Report No. 340-313

Page 1 of 1

COUPON LOCATION	EXPOSURE PERIOD	CHEMICAL IN USE	COUPON NUMBER	CORRUSION RATE (mpy)	TYPE OF CORROSION
40 SWU	01/26/84 to 03/01/84	VISCO 3410	041700	4.7	Gen. Etch

d See Deposit Weight Attachment

NALCO CHEMICAL COMPANY ANALYTICAL LABORATORIES

Form PS-108 (40M 12-82)

P. O. Box 220 Long Beach, CA 90801 1927 Nolte Drive Paulsboro, NJ 08066 Box 87 Sugar Land, TX 77478 1801 Dight Road Naperville, IL 60566



>> COUPON REPORT <<

Company: MURPHY DIL COMPANY

Address: POPLAR, MONTANA

Print date: 3/30/84 Report No. 84C-423

Page 1 of 1

COUPON LOCATION	EXPOSURE PERIOD	CHEMICAL IN USE	COUPON NUMBER	CORROSION RATE (mpy)	TYPE OF CORROSION
40 SWD File	03/01/84 to 03/21/84	VISCO 3410 & VISCO 4902	04138d	1.7	Gen. Etch

d See Deposit Weight Attachment

NALCO CHEMICAL COMPANY
ANALYTICAL LABORATORIES

Form PS-108 (40M 12-82)

P. O. Box 220 Long Beach, CA 90801 1927 Nolte Drive Paulsboro, NJ 08066

Box 87 Sugar Land, TX 77478 1801 Diehl Road Naperville, IL 60566



File 4-0 ANALYTICAL

>> COUPON REPORT <<

ipany: MURPHY OIL iress: POPULAR, MONTANA

Print date: 5/ 7/84 Report No. 84C-640

Page 1 of 1

IPON LOCATION	EXPUSURE PERIOD	CHEMICAL IN USE			TYPE OF CORROSION
SWD .	01/26/84 to	VISCO 3410	04132a	3. 2	Pitting
	04/30/84				
	03/21/84	VISCO 3410	14229+	0 - 4	
	to				
	04/30/84				
SWD .	01/26/84	VISCO 3410	04153d	1.1	´ Gen. Etch
	to		•		
	04/30/84				
SWD	01/26/84	VISCO 1111	04163a	0.7	
	to	3		•	
	04/30/84	VISCO 3410			
			. :		

NALCO CHEMICAL COMPANY ANALYTICAL LABORATORIES

Form PS-108 (40M 12-82)

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1927 Nolte Drive

Paulshorn N.I nanss

Box 87 Sunarl and TX 77478 1801 Diehl Road Nanarvilla, II. 60566

⁺ See Coupon Note Attachment

^{&#}x27;d See Deposit Weight Attachment



mpany: MURPHY GIL

POSS: POPULAR, MONTANA

Print date: 5/ 7/84 Report No. 84C-640

Note Attachment

upon Number

Nota

14229

> 316 5.5.

NALCO CHEMICAL COMPANY
ANALYTICAL LABORATORIES

Form PS-108 (40M 12-82)

1927 Nolte Drive

Box 87

1801 Diehl Road



impany: MURPHY DIL Idress: POPULAK, MONTANA

Print date: 5/ 7/84 Report No. 84C-640

84C-640

Attachment

SCALE DEPOSIT REPORT >>

Coupon Number	Weight (in mg)
04132	126.6
04153	333.1
04163	146-1

NALCO CHEMICAL COMPANY **ANALYTICAL LABORATORIES**

Form PS-108 (40M 12-82)

10 C4 90901

1927 Noite Drive

Box 87

1801 Diehl Road





ANALYTICAL 5 1984 LABORATORY REPORT

>> COUPON REPORT <<

Company: MURPHY OIL CORPORATION

Address: POPLAR, MONTANA

Print date: 6/20/84 Report No. 84C-891

Page 1 of 1

COUPON LOCATION	EXPOSURE PERIOO	CHEMICAL IN USE	COUPON Number.	CORROSION RATE (mpy)	TYPE OF CORROSION
/					
V-0 SHO	04/30/84 to 06/06/84	VISCO 3410	14091+	0.2	
5-0 SWO .	04/30/84 to 06/06/84	VISCO 3410	04301d	7.0	Localized

+ See Coupon Note Attachment d See Deposit Weight Attachment

NALCO CHEMICAL COMPANY
ANALYTICAL LABORATORIES

Form PS-108 (40M 12-82)

P. O. Box 220 Long Beach, CA 90801 1927 Nolle Drive Paulsboro, NJ 08066

Sugar Land, TX 77478

1801 Diehl Road Naporville, IL 60566



REPORT OF WATER ANALYSIS

Company

Murphy Oil Corporation Poplar, Montana

Date August 20, 1985 Analysis No.

Sampling Date August 20, 1985 Date Sample Rec'd. August 20, 1985

Sample Marked 4-D

DISCOLLED COLLED			D.C	
DISSOLVED SOLIDS			RESULTS A	S COMPOUND
Cations	mg/l	meq/I		· mg/l
Sodium, Na (Calc.)	35,972	1,564	as NaCl	
Calcium, Ca	2,000	100	as CaCO ₃	5,000
Magnesium, Mg	729	60	as CaCO ₃	3,000
Barium, Ba	0	0	as BaSO ₄	0
	20 701	1 724		•
Cations Total	38,701	1,724		
Anions			•	
Chloride, Cl	59,486	1,678	as NaCl	98,000
Sulfate, SO ₄	1,927	40	as Na ₂ SO ₄	2,850
Carbonate, CO ₃	• 0	0	as CaCO3	0
Bicarbonate, HCO ₃	390	6	as CaCO ₃	320
Anions Total	61,803	1,724		
Total Dissolved Solids (Calc.)	100,504			
Total Iron, Fe	0.2		as Fe	0.
Acidity to Phenolphthalein, CO ₂	132		as CaCO ₃	300
OTHER PROPERTIES pH	5.9		Ç1CO3 STABILIT @ 70° F. @ 120° F.	Y INDEX
Turbidity (JTU)			@ 160° F.	
Sulfide, as H ₂ S	/procost\		Method of Stiff &	Davis
burriae, as no	(present)		Method of Still &	DRAIZ

/mg

cc:

D. Kasowski D. Brown

Remarks:

NALCO CHEMICAL COMPANY
VISCO CHEMICALS
P. O. BOX B7 • SUGAR LAND, TEXAS 77478

rademarks of Nalco Chemical Company.



TRETOLITE DI SION 369 Marshall Avenue / Saint Louis, Missi, 163119 (314) WO 1-3500/TWX 910-750-1660/Talex 44-2417

WATER ANALYSIS REPORT

۸۲	Murphy Oil Co.	ADDRESS	Poplar, M	ont.	_ DATE:	
_(#4 S. W. Disp.	DATE SAMPLED	11-8-76	Ai	NALYSIS NO. ————	
	Analysis		Mg/L		•Meq/l	
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. *Mil	PH 7.0 H ₂ S (Qualitative) Pos. Specific Gravity 1.090 Dissolved Solids Suspended Solids Phenol Alkalinity (CaCO ₃) M. O. Alkalinity (CaCO ₃) 1.9 x 100 Bicarbonate (HCO ₃) 1.9 x 122 Chlorides (Cl) 15.5 x 4822 Sulfates (SO ₄) .7 x 1500 Calcium (Ca) 1.4 x 811.6 Magnesium (Mg) Total Hardness (CaCO ₃) 1.9 x 2030 Total Iron (Fe) Barium (Qualitative)	HCO,	190 232 741 1050 1136 247 3857 PPM	÷61 - ÷35.5 - ÷48 - ÷20 - ÷12.2 -	2105 22 57 20	— HCO; — Ci — SO; — Ca — Mg
	PROBARIE MIN	NERAL COMPOS	SITION			

7 Co (HCO ₃ 4	Compound	Equiv. Wt.	X Meq/L =	= Mg/L
	→ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Co (HCO ₃) ₂	81.04		324
) Mg ———————————————————————————————————	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Ca SO ₄	68.07	_22	1498
	ed Water 20°C	$Ca\;Cl_2$	55.50		1721
Ca CO ₃ 13	3 Mg/L	Mg (HCO ₃) ₂	73.17		
	,090 Mg/l 03 Mg/l	Mg SO ₄	60.19		.
		Mg Cl ₂	47.62	50	952
		No HCO3	84.00		
		Na ₂ 5O ₄	71.03		
		Na CI	58.46	2054	120,077
Solubility of	CaSO, in this water	er is 6597 Mg/l,	as determ	ined by_	
•	equation $S = S_p \times F_j$		 		
			Respectfully TRETOLITE C		
1 11/68 BF			Bob And	lerson	



1PLE

STABILITY INDEX CALCULATIONS (Stiff-Davis Method) CaCO₃ Scaling Tendency

	Sample Test No			
Company Murphy Oil Co.	Sample Date <u>11-8-76</u>			
Address Poplar, Montana	Submitted by Bob Anderson			
Sample#4 S.W. D.	Field			
S. I. = $pH - pCa - pAlk - K$				
where S. I. = stability index pH = pH as measured on fresh sam pCa = negative logarithm of calcium pAlk = negative logarithm of total all K = constant, depends upon tempe	concentration calinity			
pH = 7.0 $pCa = 1.5$	pAlk =2,4			
LCULATION OF IONIC STRENGTH AND K VAL	LUE			
Na $(\underline{47242}) \times (2.2 \times 10^{-5}) = \underline{1.039}$	9			
Ca $(_{1136}) \times (5.0 \times 10^{-5}) = _{.057}$	7			
Mg $(\underline{247}) \times (8.2 \times 10^{-5}) = \underline{.020}$	<u> </u>			
C1 $\left(\frac{74741}{} \right) \times \left(1.4 \times 10^{-5} \right) = \frac{1.046}{}$	<u> </u>			
HCO_3 (2			
SO_4 (1050) X (2.1 X 10 ⁻⁵) = .022	2			
TOTAL IONIC STRENGTH = 2.186	5			
K = 3.1 @ 100 °F.				
$K = _{0}$ @ 0 F.				
3I at $(100)^0 = (7.0) - (1.5) - (2.4)$	- (<u>3.1</u>) or <u>0</u>			
3I at $(160)^{\circ} = (7.0) - (1.5) - (2.4) - (2.0)$ or 1.1				
SI = O or water is relatively stable at 100 °F.				
arks: This water will tend to have CaCO3 scaling tendency above 100° F.				



PIPE VALVE & FITTING COMPANY

:H E & WAREHOUSE IX 15765 .AKE CITY, UTAH 84115 i-7249

P.O. BOX 5806, T.A. DENVER, COLORADO 80217 289-5811 BRANCH OFFICE: P.O. BOX 2123 BISMARCK, N. D. 58501 701-258-7992

Date
4-D
00 ggl 287: peid As Follows 1
00 991 F 40 (5 Urtactant)
0001 28% - 500k 15min
0 ept 2822 - 504K - 15min
o gol F-40 (surfaction+
0 gp/ 2872 - 50 pt 15 min
0 gs/ 2870 - 50 ak- 15 min
Chuck Stevens
80st *2929
Dowell 3.17-77
A CAPACITY OF THE PARTY OF THE
•

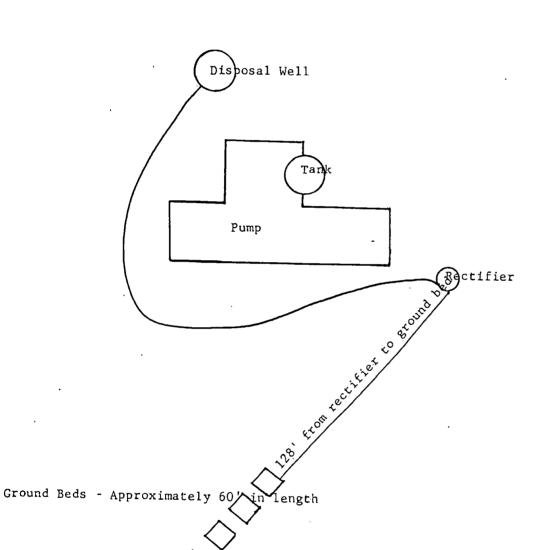
PRODUCTION & INJECTION DATA

- ------

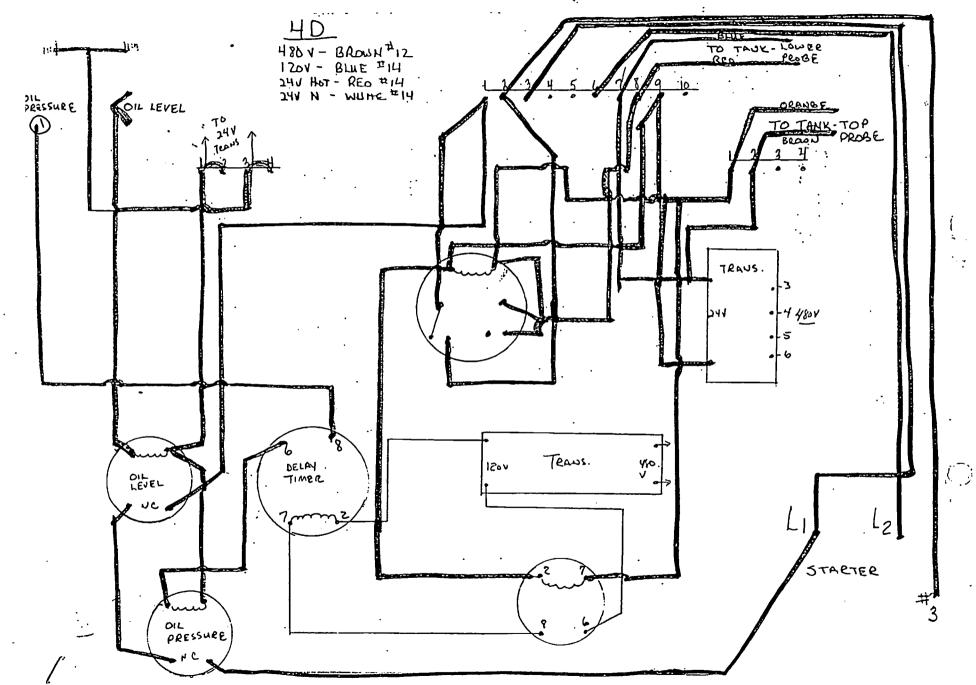
. , ,	
4-D	
Pairless pump has 11/2 51	59. <u>F. 1</u>
Longth shuff for 8 be	mft. 4 9.5 3/8"
	- /47"
each bowl is 7 1/16 Long	
Mr. bottom end turned do	un to 13/16" X 5 10" Long
Thintop. E.N.d. 1s. Thand	wy 1/2" x5/2" some the
3-31:78 +UN 8 5/age pump	
to pmp 8000 BFD @ 8073 cf	•
Ind wear in the impletter	
Sill willed and a heat shall	
bewis- will order New Straft.	
bock	
,	

oplar Unit No. 4-D ic Protection Installation 1980

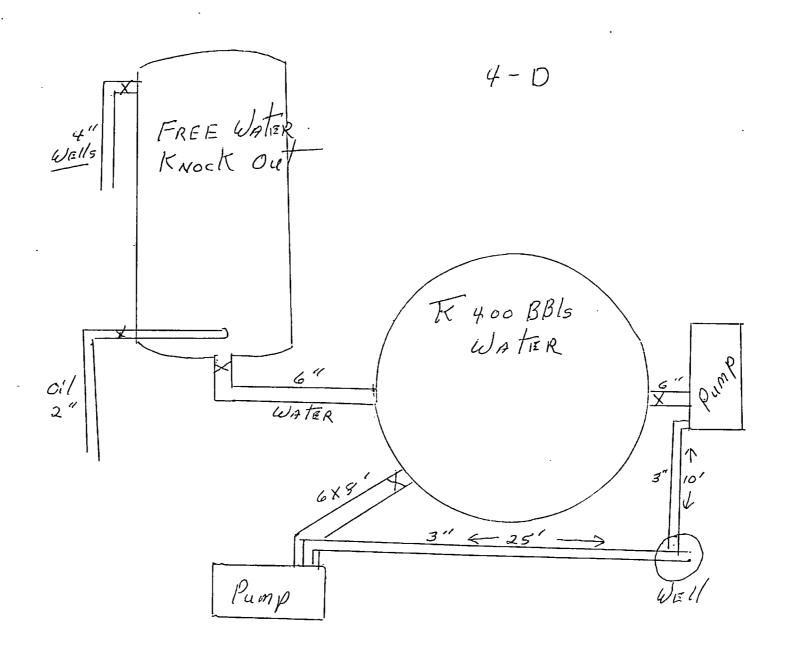




12 7.05 601 D. 34 Too his Statio, 6 1.4. 9/000 10 + R. 2h ·R · /** · C RA Trafe



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FÓRM NO. 2 R7/99

ARM 38,22,307, 601, 805 1003,1004 1011, 1013,1103,1222,1240 1301,1308,1309, and 1417

MONTANA BOARD OF OIL AND GAS CONSERVATION 2535 ST. JOHNS AVENUE BILLINGS, MONTANA 59102

SUNDRY NOTICES AND REPORT OF WELLS Operator SAMSON RESOURCES Address TWO WEST 2nd STREET HUBER					
Operator SAMSON RESOURCES			Lease Name:	8	
Address TWO WEST 2nd STREET				<u> </u>	
City TULSA State OK Zip Code	74103-	3103	PRIVATE Received	2026	
Telephone Number (918) 583-1791 Fax Number (918)	3) 591	1-1702	Well Number: State of 34 & Cast Control State of M1 / Billing:	727	
Location of well (1/4-1/4 section and footage measurement	nts):		Unit Agreement Name:	4.25.	
C NW NE. 660 FNL, 1980 FEL			Field Name or Wildcat:		
			POPLAR EAST	}	
If directionally or horizontally drilled, show both surface and	bottom	hole locations)	Section, Township, and Range:		
API Number: Well Type (oil, gas	s, injectio	on, other):	10-28N-51E	_	
25 0 8 5 0 0 5 0 1 4 17 Pre-UIG			County:		
State Gaussy Well TA'd Dis	sposal \	Well	ROOSEVELT		
Indicate below with an X the nature of this notice, report, of	or other	data:	-		
Notice of Intention to Change plans		Subsequent	Report of Mechanical Integrity Test		
Notice of Intention to Run Mechanical Integrity Test		Subsequent	Report of Stimulation or Chemical Treatment		
Notice of Intention to Stimulate or to Chemically Treat		Subsequent	Report of Perforation or Cementing		
Notice of Intention to Perforate or to Cement		Subsequent	Report of Well Abandonment		
Notice of Intention to Abandon Well	Ø	Subsequent	Report of Pulled or Altered Casing		
Notice of Intention to Pull or After Casing		Subsequent	Report of Drilling Waste Disposal		
Notice of Intention to Change Well Status		Subsequent	Report of Production Waste Disposal		
Supplemental Well History		Subsequent	Report of Change in Well Status		
Other (specify)		Subsequent	Report of Gas Analysis (ARM 36.22.1222)		
		<u> </u>		. 🛛	
Describe Proposed or Completed Operations: Describe planned or completed work in detail. Attach maps, well-bore configuration diagrams, analyses, or other information as necessary. Indicate the intended starting date for proposed operations or the completion date for completed operations. See attached procedure. Plugging will commence upon approval.					
BOARD USE ONLY			lersigned hereby certifies that the information cont	ained	
Approved AUG 1 c 2002 Date Original Signed By		8/5/02	Date Signed (Agent)		
Original Signed By Steven P. Sasaki, Chief Field Inspector	ittle	Rober	t F. Schaffitzel, District Engineer Print Name & Title		

Huber 4

Sec. 10-T28N-R51E Roosevelt County, MT API No. 25-085-05047

Plug and Abandonment Procedure

- 1. MIRU service unit. NU on 10-3/4" surface casing.
- 2. PU 2-7/8" tubing and release tension pkr at +/- 824'. TOOH w/ tubing and pkr.
- 3. RU wireline and lubricator. TIH w/ 10-3/4" CIBP. Set CIBP @ 825'. TOOH w/ setting tool.
- 4. TIH w/ workstring and spot 30' coment plug from 825' to 795'.
- 5. Spot plugging fluid from top of cement to surface.
- 6. TOOH to 30' spot cement plug from 30' to surface.
- 7. Cut 10-3/4" casing off below plow depth, weld steel cap with nameplate.
- 8. Reclaim location.



1785-05047